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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,475	10/13/2000	Feng Liang	200-0163	7736

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KEVIN G. MIERZWA  
ARTZ & ARTZ, P.C.  
28333 TELEGRAPH ROAD, SUITE 250  
SOUTHFIELD, MI 48034

EXAMINER

LAM, THANH

ART UNIT PAPER NUMBER

2834

DATE MAILED: 01/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.  
**09/689,475**

Applicant(s)  
**Liang et al.**

Examiner  
**Thanh Lam**

Art Unit  
**2834**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on RCE filed 11/13/2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-8, 10-14, 17-23, 25, and 26 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-8, 10-14, 17-23, 25, and 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 2-8, 10-14, 17-23, and 25-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Jansen et al. (Pn. 6,058,596) .

Regarding claim 2, Jansen et al. disclose a method for modifying an electric machine drive rotor having a stator to create rotorposition-dependent saliency and allow sensorless control, the method comprising: providing a plurality of rotor bars (85) uniformly spaced around the rotor; and providing a plurality of sensing slots uniformly spaced around the rotor; wherein at

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least one of said plurality of sensing slots (240, 236,238) is not centered to a corresponding one of said plurality of rotor bars positioned around the rotor.

Regarding claim 3, Jansen et al. disclose method for modifying an electric machine drive rotor having a stator to create rotor position-dependent saliency and allow sensorless control, the method comprising: providing a plurality of rotor bars uniformly spaced around the rotor; and providing a plurality of sensing slots (236,238,240) variably spaced in a repeating manner around the rotor, wherein the distance between an adjacent pair of said plurality of sensing slots is variably spaced with respect to the distance between a next adjacent pair of said plurality of sensing slots and wherein at least one of said plurality of sensing slots is not centered to a corresponding one of said plurality of rotor bars positioned around the rotor.

Regarding claim 4, Jansen et al. disclose said plurality of sensing slots has a uniform width and depth around the rotor.

Regarding claim 5, Jansen et al. disclose each of said plurality of sensing slots has a uniform width around the rotor and wherein the depth of each of said plurality of sensing slots varies in a repeating manner around the rotor.

Regarding claim 6, Jansen et al. disclose each of said plurality of sensing slots has a uniform depth around the rotor and wherein the width of each of said plurality of sensing slots varies in a repeating manner around the rotor.

Regarding claims 7 and 25, Jansen et al. disclose the sensing slots are provided to the post assembly step (figs. 8-10).

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Regarding claim 8, Jansen et al. disclose a plurality of sensing slots are coupled with a plurality of stator slots of the stator.

Regarding claim 10, Jansen et al. disclose a sensorless control electric machine drive comprising: a stator having a plurality of stator slots; and a rotor having a plurality of rotor sensing slots located along its outer periphery, said rotor also having a plurality of rotor bars, wherein said plurality of rotor sensing slots are coupled to said plurality of stator slots and wherein said plurality of rotor sensing slots are spaced uniformly around the outer periphery of said rotor and wherein at least one of said plurality of rotor sensing slots is not centered to a corresponding one of said plurality of rotor bars positioned around the rotor.

Regarding claim 11, Jansen et al. disclose a sensorless control electric machine drive comprising: a stator having a plurality of stator slots; and a rotor having a plurality of rotor sensing slots located along its outer periphery, said rotor also having a plurality of rotor bars, wherein said plurality of rotor sensing slots are coupled to said plurality of stator slots and wherein said plurality of rotor sensing slots are variably spaced in a repeating pattern around the outer periphery of said rotor, wherein the distance between an adjacent pair of said plurality of sensing slots is variably spaced with respect to the distance between a next adjacent pair of said plurality of sensing slots and wherein at least one of said plurality of rotor sensing slots is not centered to a corresponding one of said plurality of rotor bars positioned around the rotor.

Regarding claims 12, 19, and 22-23, said repeating pattern comprises a sinusoidal repeating pattern.

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Regarding claims 13-14 and 20-21 the depth and width of said plurality of rotor sensing slots is varied in a repeating pattern around said rotor.

Regarding claim 26, said plurality of sensing slots are coupled with a plurality of stator slots of a stator.

Regarding claim 17, Jansen et al. disclose a sensorless control electric machine drive comprising: a stator having a plurality of stator slots; and a rotor having a plurality of rotor sensing slots located along its outer periphery, said rotor also having a plurality of rotor bars, wherein said plurality of rotor sensing slots are spaced uniformly around the outer periphery of said rotor and wherein at least one of said plurality of rotor sensing slots is not centered to a corresponding one of said plurality of rotor bars positioned around the rotor.

Regarding claim 18, Jansen et al. disclose a sensorless control electric machine drive comprising: a stator having a plurality of stator slots; and a rotor having a plurality of rotor sensing slots located along its outer periphery, said rotor also having a plurality of rotor bars, wherein said plurality of rotor sensing slots are variably spaced in a repeating pattern around the outer periphery of said rotor, wherein the distance between an adjacent pair of said plurality of sensing slots is variably spaced with respect to the distance between a next adjacent pair of said plurality of sensing slots and wherein at least one of said plurality of rotor sensing slots is not centered to a corresponding one of said plurality of rotor bars positioned around the rotor.

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*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (703) 308-7626. The fax phone number for this Group is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0656.

A handwritten signature in black ink, appearing to read 'Thanh Lam', with a large, sweeping initial 'T'.

Thanh Lam

Patent Examiner